ORIGINAL

ORIGINAL

DOW, LOHNES & ALBERTSON, PLLC
ATTORNEYS AT LAW

CARLOS M. NALDA
DIRECT DIAL 202-776-2076
cnalda@dlalaw.com

WASHINGTON, D.C.
1200 NEW HAMPSHIRE AVENUE, N.W. · SUITE 800 · WASHINGTON, D.C. 20036-6802
TELEPHONE 202-776-2000 · FACSIMILE 202-776-2222

ONE RAVINIA DRIVE · SUITE 1600
ATLANTA, GEORGIA 30346-2108
TELEPHONE 770-901-8800
FACSIMILE 770-901-8874

February 8, 1998

VIA HAND DELIVERY

RECEIVED

FEB - 8 2000

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

EX PARTE OR LATE FILED

Magalie Roman Salas, Esq.
Secretary
Federal Communications Commission
The Portals
445 12th Street, S.W.
Washington, D.C. 20554

Re: IB Docket No. 98-172,
Notice of Written and Oral *Ex Parte* Communication

Dear Ms. Salas:

Pursuant to Section 1.1206 of the Commission's Rules, this letter is submitted to advise the Commission that representatives of ASTROLINK International LLC ("Astrolink") met on February 7, 2000 with Ari Fitzgerald, Peter Tenhula, Mark Alvarez, Richard Engelman, Thomas Stanley, Karl Kensinger, Edward Jacobs and Steve Selwyn of the Commission's staff to discuss issues associated with potential modifications to the FCC's initial band plan proposal in the 18 GHz spectrum designation proceeding. The issues addressed in Astrolink's meetings with these Commission staff members are outlined fully in the attached written *ex parte* presentation, which was provided during the meetings.

In accordance with Section 1.1206, an original and two copies of this letter and attachment are being submitted to the Secretary's office on this date. Should any questions arise with respect to this matter, kindly communicate with the undersigned.

Respectfully submitted,

Carlos M. Nalda

Carlos M. Nalda
Counsel for ASTROLINK International LLC

Attachment
cc: Ari Fitzgerald
Peter Tenhula
Mark Alvarez
Karl Kensinger
Richard Engelman
Thomas Stanley
Edward Jacobs
Steve Selwyn

D+2

Dow, Lohnes & Albertson, pllc
ATTORNEYS AT LAW

WASHINGTON, D.C.

1200 NEW HAMPSHIRE AVENUE, N.W. • SUITE 800 • WASHINGTON, D.C. 20036-6802
TELEPHONE 202-776-2000 • FACSIMILE 202-776-2222

December 30, 1999

VIA ECFS

Magalie Roman Salas, Esq.
Secretary
Federal Communications Commission
The Portals
445 12th Street, S.W.
Washington, DC 20554

WRITTEN EX PARTE PRESENTATION

Re: Views of ASTROLINK International LLC; IB Docket No. 98-172

Dear Ms. Salas:

ASTROLINK International LLC ("Astrolink"), by its attorneys, hereby provides its views on potential modifications to the Commission's proposed 18 GHz band plan. Astrolink is the licensee of the Astrolink™ System, a first-round Ka-band GSO FSS system that will provide advanced broadband communications services to businesses and consumers in the United States and around the world. Accordingly, Astrolink has a direct and substantial interest in the 18 GHz spectrum designations under consideration by the Commission.

The Commission's 18 GHz band plan includes a sole primary GSO FSS designation in the 18.3-18.55 GHz band, and a co-primary GSO FSS/FS designation in the 18.55-18.8 GHz band.[1] On December 16, 1999, representatives of Astrolink attended a meeting hosted by the FCC's International and Wireless Bureaus in which the staff requested input from the Ka-band satellite community on the impact of three possible adjustments to the FCC's pending 18 GHz band plan: (i) flipping the GSO FSS and GSO FSS/FS spectrum designations (*i.e.*, the 18.3-18.55 GHz band would be shared and the 18.55-18.8 GHz band would be GSO FSS only); (ii) in addition to 18.3-18.55 GHz band, designating the 18.55-18.58 GHz band as shared GSO FSS/FS

[1] *See Redesignation of the 17.7-19.7 GHz Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75 25.25 GHz Frequency Bands for Broadcast Satellite Service Use,* Notice of Proposed Rulemaking, IB Docket No. 98-172 (rel. Sept. 18, 1998) at ¶ 29 ("*18 GHz NPRM*"). The sole primary GSO FSS designation in the 18.3-18.55 GHz band was intended to permit the deployment of blanket-licensed satellite user terminals in this spectrum. *Id.*, at ¶32. The Commission proposed to grandfather existing fixed services in this band. *Id.*, at ¶40.

spectrum (a 30 MHz incursion into the sole primary GSO FSS spectrum at 18.55-18.8 GHz); and (iii) in addition to 18.3-18.55 GHz band, designating the 18.55-18.62 GHz band as shared GSO FSS/FS spectrum (a 70 MHz incursion into the sole primary GSO FSS spectrum at 18.55-18.8 GHz). Astrolink's views on these possible modifications to the 18 GHz band plan are outlined below.

As a preliminary matter, Astrolink notes that each of the potential modifications to the pending 18 GHz band plan proposed by the Commission retains a primary GSO FSS designation (either on an exclusive basis or shared with the FS) in the 18.3-18.8 GHz band. Moreover, the Commission staff present at the December 16 meeting confirmed that no relocation of the 500 MHz block of primary GSO FSS downlink spectrum at 18.3-18.8 GHz is contemplated. Astrolink strongly supports the Commission's conclusion that a primary GSO FSS designation will be included in the 18.3-18.8 GHz band.

Astrolink is currently in an advanced stage of system implementation, having obtained approximately $1.33 billion in equity financing from major investors and begun construction of its initial satellite constellation. The Astrolink satellites under construction are designed to operate in the 18.3-18.8 GHz downlink band, as specified in the Astrolink modification application filed on December 22, 1997.[2] At this stage, *any* modification to the 18.3-18.8 GHz downlink spectrum would be extremely disruptive to the Astrolink program and would significantly delay system deployment.[3] Accordingly, Astrolink believes that it is vital for the Commission to retain the primary GSO FSS designation in the 18.3-18.8 GHz band, regardless of any other adjustments it makes to the 18 GHz band plan.

With respect to the specific 18 GHz band plan modifications under consideration by the Commission, Astrolink generally agrees that flipping the sole primary GSO FSS and shared GSO FSS/FS spectrum designations in the 18.3-18.55 GHz and 18.55-18.8 GHz bands may facilitate the deployment of blanket-licensed GSO FSS user terminals in 250 MHz of spectrum at 18 GHz as envisioned by the Commission.[4] However, the pfd limit currently applicable to FSS use of the 18.6-18.8 GHz band in the United States effectively precludes the deployment of blanket-licensed GSO FSS user terminals in the 18.55-18.8 GHz band (although gateway earth stations could operate consistent with the limit).[5] Because relaxation of this pfd limit is necessary to

---

[2] *See* Astrolink Modification Application, File No. SAT-MOD-19971222-00200 (filed Dec. 22, 1997) at 14-15.

[3] Modification of the assigned downlink frequencies presumably also would disrupt the implementation of other first-round Ka-band systems, which have been licensed since May 1997.

[4] *See 18 GHz NPRM* at ¶¶ 30, 32 and 44. There appear to be significantly fewer FS transmitters deployed in the 18.55-18.8 GHz band, which would facilitate ubiquitous GSO FSS operations and generally would avoid potential FS relocation issues associated with similar use of the 18.3-18.55 GHz band.

[5] *See id.*, at ¶ 64.

permit the deployment of ubiquitous GSO FSS user terminals in the 18.55-18.8 GHz band, Astrolink would support flipping the designations at 18.3-18.55 GHz and 18.55-18.8 GHz if the existing pfd limit applicable to FSS operations at 18.6-18.8 GHz is relaxed.

Astrolink cannot support, however, the proposed 30 MHz and 70 MHz incursions of shared FS/GSO FSS spectrum into the "flipped" sole primary GSO FSS spectrum designation at 18.55-18.8 GHz. Any such incursion would preclude the deployment of blanket-licensed satellite user terminals in the remaining spectrum (*i.e.*, either 220 MHz or 180 MHz of GSO FSS spectrum up to 18.8 GHz). For example, the Astrolink satellites will utilize 250 MHz TDM downlink channels and therefore require 250 MHz of "clean" (unshared) spectrum for ubiquitous user terminals.[6] Designating smaller amounts of unshared spectrum provides no real benefit; FS transmissions at 18.55-18.58 GHz or 18.55-18.62 GHz will "pollute" the entire 250 MHz wideband downlink channel with interference (even though they only partially overlap the 18.55-18.8 GHz band).[7] Moreover, because of this interference impact and because GSO FSS/FS sharing requires individual coordination of both types of stations, it will be impossible to implement blanket licensing in the "remaining" sole primary GSO FSS spectrum. Thus, *any FS incursion into the 250 MHz of sole primary GSO FSS spectrum would preclude blanket licensing and effectively eliminate the sole primary GSO FSS spectrum designation in the remainder of the 18.55-18.8 GHz band.*[8]

In this connection, the Commission proposes to grandfather existing FS services operating in the 18.55-18.58 GHz band (primarily CARS or "wireless cable" transmitters). Given the interference and coordination impacts of co-frequency FS operations described above, this proposal may limit the deployment of blanket-licensed Ka-band satellite user terminals in the 18.55-18.8 GHz band to geographic areas free from interference caused by grandfathered FS stations (*e.g.*, outside of major metropolitan areas with significant CARS deployment). Any such limitation on the deployment of GSO FSS user terminals can be avoided, however, by phasing out of grandfathered CARS operations in the 18.55-18.58 GHz band.

CARS operators currently utilize analog equipment and will be required to transition to digital equipment as the video transmissions they carry move to digital. As a result, CARS services will become far more spectrally efficient and will be able to provide far greater transmission capacity in significantly less spectrum. Accordingly, Astrolink urges the

---

[6] The vast majority of Ka-band satellite systems that were licensed in the first processing round, and proposed in the second round, also will utilize wideband TDM downlinks (*e.g.*, 125 MHz or 250 MHz bandwidth channels).

[7] Because Ka-band satellite earth stations receive in the 18 GHz band and transmit at 30 GHz, they cannot cause interference into FS operations at 18 GHz but rather are the victims of interference from FS transmitters operating in shared frequency bands.

[8] This conclusion is supported by the Commission's own findings in the *18 GHz NPRM*. *See, e.g., 18 GHz NPRM*, at ¶16-17, 43, 64-65.

Commission to phase out grandfathered CARS operations in the 18.55-18.8 GHz band after a transition period of five years.[9] The small 30 MHz reduction in FS spectrum will be recouped many times over by the increased spectral efficiency gained through the use of digital equipment. Thus, phasing out grandfathered FS operations in the 18.55-18.58 GHz band will ensure that consumers in all areas of the United States have access to the advanced broadband communications services to be provided by Ka-band satellite networks such as Astrolink while, at the same time, preserving sufficient spectrum for the future FS operations.

In sum, Astrolink generally supports the Commission's proposal to flip the sole primary GSO FSS and co-primary GSO FSS/FS spectrum designations in the 18.3-18.55 GHz and 18.55-18.8 GHz bands, provided that the Commission works towards relaxation of the 18.6-18.8 GHz pfd limit in order to permit the deployment of blanket-licensed user terminals in the 18.55-18.8 GHz band. Astrolink cannot support, however, any incursion of co-primary FS spectrum in the 18.55-18.8 GHz band because it effectively would preclude the deployment of blanket-licensed satellite user terminals in that spectrum. In addition, Astrolink urges the Commission to phase out grandfathered FS operations in the 18.55-18.58 GHz band over a period of five years so that ubiquitous GSO FSS user terminals operating at 18.55-18.8 GHz can be fully deployed throughout the United States.

Respectfully submitted,

ASTROLINK INTERNATIONAL LLC

_____

Raymond G. Bender, Jr.
Carlos M. Nalda
Counsel to ASTROLINK International LLC

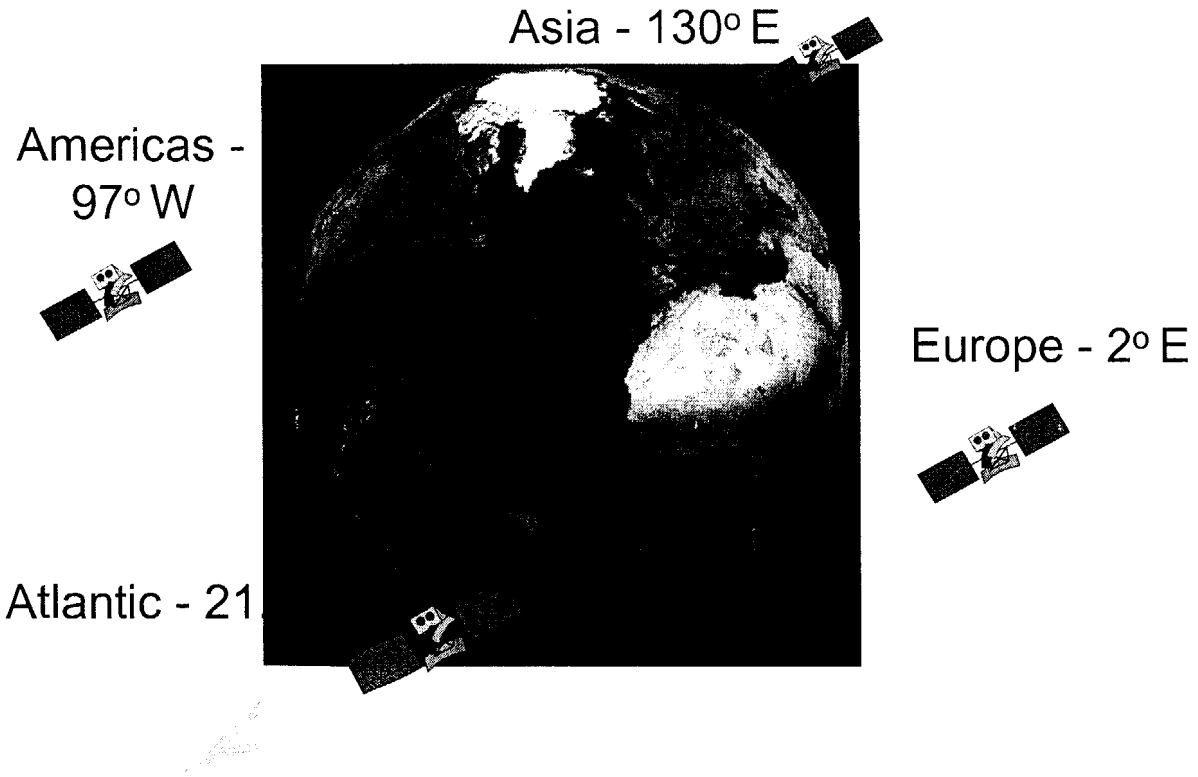
cc: Donald Abelson
Thomas Sugrue
Harry Ng
Edward Jacobs
Karl Kensinger
Steve Selwyn
Michael Pollack
Thomas Stanley

[9] This five-year transition period recognizes that licensed Ka-band GSO FSS do not have an immediate need for this spectrum and will give FS operators sufficient time to complete their transition to digital equipment.

Astrolink Summary

Global broadband satellite system offering rich, interactive multimedia services

Complements terrestrial networks or offers an alternative high speed network



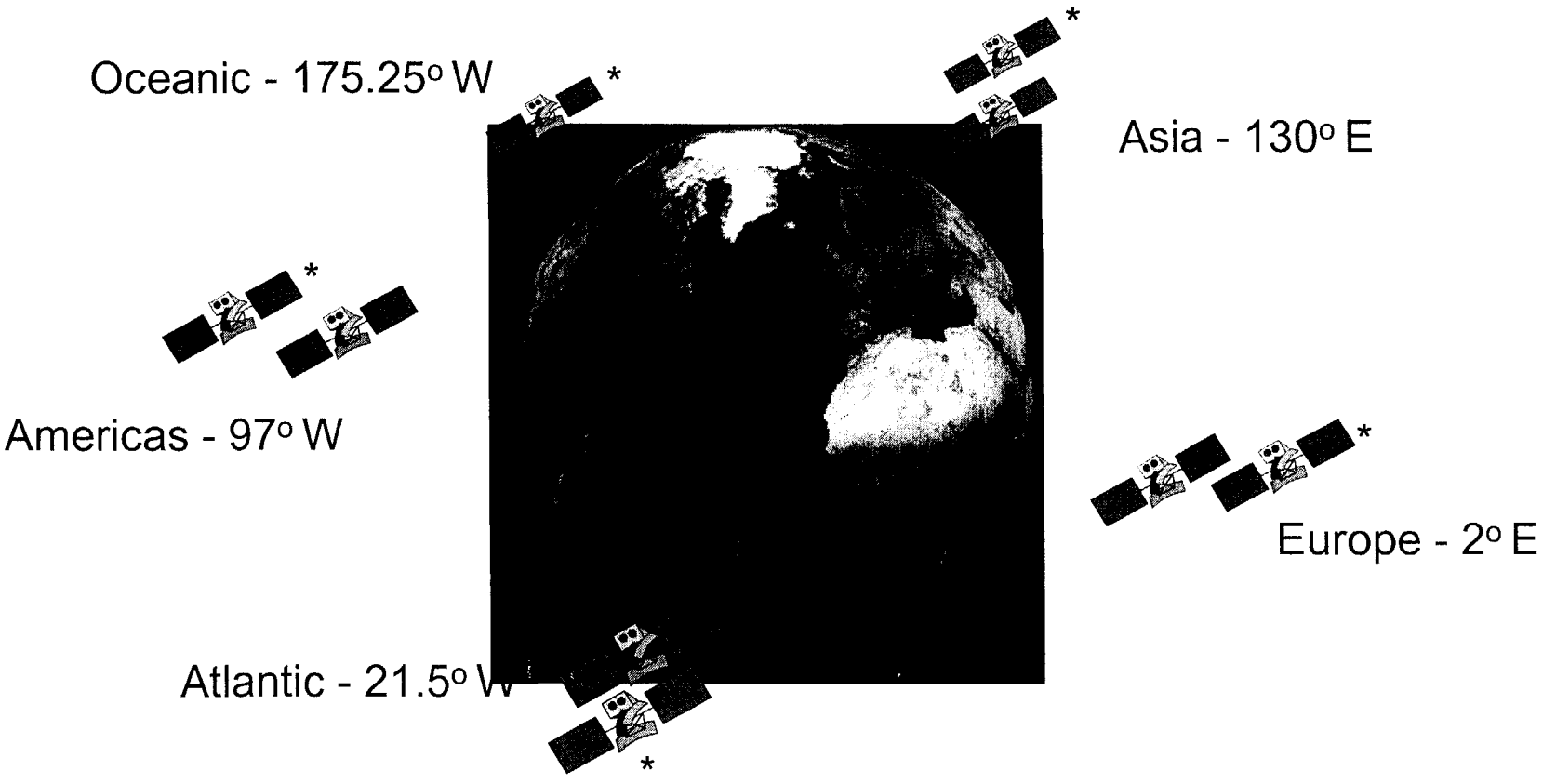
- The System
  - Initially 4 GSO satellites
  - Ka-band frequencies
  - On-board processing
- The Venture
  - $3.6 billion total funding needs
  - 4 partners:
    - Liberty Media $425 Million
    - Lockheed Martin $400 Million
    - TRW $255 Million
    - Telespazio $250 Million
    - TOTAL $1.33 Billion
- Milestones
  - 2002 First satellite launch
  - 2003 Commercial availability
  - 2004 Full constellation

Press Announcements

- May 6, 1999
  - Astrolink formed with $900 million in initial equity
  - Astrolink's first global, on-demand wireless broadband data communications
  - High speed Internet access and global connectivity resonates with customers and market analysts
- October 26, 1999
  - Liberty Media invests $425 million for a total of $1.33 billion raised
  - Leading telemedia company validates Astrolink global broadband access proposition

Astrolink Orbital Locations

Full Constellation:



Fully Licensed (Ka-band) by the FCC for 9 Satellites in 5 Orbital Locations

** Satellites launched in 2nd phase*

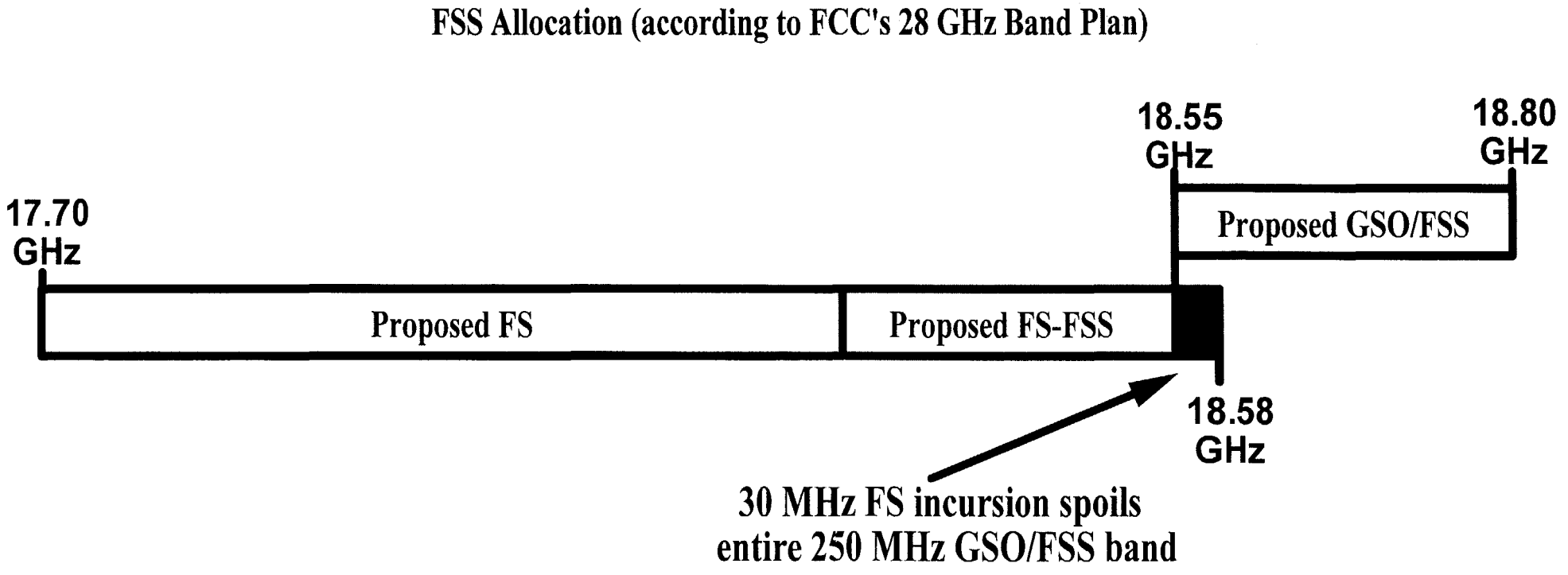
Astrolink Status Summary

- Committed funding of more than $1.3 billion
- Satellites and Ground Segment are already under construction
- Project must have certainty regarding spectrum usage
- Available "user-terminal" spectrum directly impacts business plan

Certainty of the 18.3-18.8 GHz Band

- Astrolink System is being built based on the use of the 18.3-18.8 GHz band
- Any change to this would delay launch of satellites, delay service to customers and cost many millions of $
- Imperative that the FCC not deviate from this aspect of the 18 GHz Band Plan

30 MHz Incursion Spoils 250 MHz



- Astrolink uses a single wideband 250 MHz downlink channel (18.55-18.8 GHz)

Ka-Band User-Terminals Cannot Operate in Shared FS-FSS Spectrum

- Blanket licensing of user-terminals in shared FS-FSS spectrum is not possible because individual site coordination is required
- Ubiquitous deployment of user-terminals requires:
  - exclusive FS-free spectrum
  - spectrum free from any new FS transmitters

Astrolink Needs User-Terminal Downlink Spectrum

- Without the 18.55-18.8 GHz band Astrolink business is limited to 19.7-20.2 GHz downlink spectrum used for initial deployment of "user-terminals"
- Proposed 30 MHz incursion of FS will effectively reduce Astrolink "user-terminal" spectrum by 33%, and similarly restrict revenue potential

CARS Conversion to Digital

- CARS is currently an analog TV distribution system
  - 440 MHz used for 70 channels
- CARS must eventually convert to digital TV in line with industry trends
  - will reduce spectrum needs to around 200 MHz
  - easily avoid the 30 MHz incursion into the 18.55-18.8 GHz GSO/FSS band in the future
- Sunset period for removal of CARS from 18.55-18.58 GHz band

Summary of Astrolink Position

- FCC must maintain the GSO/FSS allocation in the 18.3-18.8 GHz band
- Swapping the exclusive GSO/FSS Primary band from 18.3-18.55 GHz to the 18.55-18.8 GHz band is acceptable, subject to raising of the existing PFD limit in the 18.6-18.8 GHz band
- FCC should stop licensing new FS systems in the 18.55-18.58 GHz band and eventually migrate CARS out of this band as CARS converts to Digital